Patent Application No. 10/043,714
Amdt. Dated October 4, 2006
Reply to Office Action of July 6, 2006

Docket No. MET2.PAU.25

Amendments to the Claims:

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1.   (Currently Amended) A television rating system for targeted program delivery, comprising:

a server-side system for evaluating television viewing data and for categorizing the data into user category groups;

a clustering engine included in the server-side system for receiving the television viewing data input, processing the television viewing data input, and generating user profiles targeting the user advertising category groups;

a client-side system coupled to the server-side system and adapted to classify a television user into at least one of the useradvertising category groups;

a contextual behavioral profiling system included in theconnected to said client-side system for deriving profiling information related to and determining a television user's viewing behavior with content and usage-related preferences; and

a behavioral model database connected to thesaid profiling system forand storing in the client-side system the profilingtherein information related to with the television user's viewing behavior.

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2. (Currently Amended) The <u>television rating</u> system according to claim 1, wherein said clustering engine is a software agent residing in a central computer system at a television distribution head-end <u>in the server side system</u> and is programmed to create template behavioral profiles <u>each</u> corresponding to <u>an associated one of the</u> targeted <u>user category groups</u>advertising categories of television viewers.

3. (Currently Amended) The <u>television rating</u> system according to claim 2, wherein said clustering engine is trained substantially exclusively on tagged viewing data from a given target group to learn a most general profile of the given target group.

4. (Currently Amended) The <u>television rating</u> system according to claim 2, wherein said clustering engine is programmed to generalize <u>user</u>viewer's profiles in <u>a targeted category</u>each group into <u>an</u>a representative aggregation <u>representative of</u> for a respective advertising category, and to form advertising category profiles by aggregating all dimensions most strongly in common for the <u>targeted</u>given group and <u>all dimensions</u> most unique across <u>several of the</u> target<u>ed</u> groups.

5. (Currently Amended) The <u>television rating</u> system according to claim 1, which further comprises an advertisement manager <u>residing at the server-side system and</u> connected to query said behavioral model database<u> in the client-side system</u>, said advertisement manager being programmed to parameterize behavioral profiles of said behavioral model database and to download the parameterized behavioral profiles to an advertising

category membership agent residing at said client-side system.

6. (Currently Amended) The television rating system according to claim 5, wherein said advertisement manager~~advertising category membership agent~~ includes a television user's history and is configured to reconstruct the downloaded parameterized behavior profiles in accordance with ~~targeting models, and apply a clustering engine to~~ the television user's history to determine a most likely advertising category for the user, and ~~belongs to and~~ store the results as targeting category probabilities in a user category database.

7. (Currently Amended) The television rating system according to claim 5, which further comprises targeting agents and presentation agents disposed at said client-side system for creating an optimization of~~combining the~~ targeted~~ing~~ category probabilities and relevant preference information in order to selectively capture, store, and display advertisements downloaded in accordance with the optimization.

8. (Currently Amended) In an interactive display system having~~with~~ a head-end side for distributing program content that has been pruned for a user category, and a client side receiving the program content and selectively displaying the program content in accordance with the~~a user's~~ selection of a user, a preference engine for determining a ~~the~~ ~~user's~~preferred program content for the user, comprising: a user monitoring device receiving the pruned program content~~connected~~ at the client side for recording~~to record~~ contextual transition behaviors profiling the user~~one or more users and~~ to continually

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build a <u>user profile</u><s>knowledgebase</s> of preferences and contextual transition behaviors

<u>associated with</u> <s>profiling</s> the <s>one or more</s> users; and a<u>program distributing</u> device <u>at the</u>

<u>head-end side</u> for providing to the <s>one or more users</s> <u>user</u> the program content in

accordance with the <u>user</u><s>user's</s> <u>profile</u><s>demographic information and with the contextual</s>

<s>transition behavior profile</s>.

9. (Currently Amended) The <u>interactive display system and</u> preference engine according

to claim 8, wherein said user monitoring device models the user's behavioral interaction

with advertising program content and with entertainment program content.

10. (Currently Amended) The <u>interactive display system and</u> preference engine according

to claim 8 <u>wherein</u><s>,</s> the <u>program distributing device is</u> connected to receive from the

head-end metadata <u>information</u> describing advertising content and <s>metadata describing</s>

entertainment program content, and <u>is</u> programmed to <u>adjust the user profile</u><s>establish</s>

<s>content preferences</s> by combining <u>the</u> metadata information with the <u>preferences and</u>

contextual transition behavior<u>s</u> <s>profile</s><u>of the user</u>, and to build a relational knowledge

base with associations <u>among</u><s>between</s> the <s>user's</s> behavior, demographics, and program

content preferences<u>of the user</u>.

11. (Currently Amended) The <u>interactive display system and</u> preference engine according

to claim 8 <u>wherein the user maintaining device is</u> programmed to model patterns of usage

behaviors with a behavioral model and to extract key usage information from the

behavioral model into a behavioral database, having wherein each entry in the behavioral

database has a confidence value thatassociated therewith reflects an estimate of a

structural and sampling quality of the data inused to calculate the database entry.

12. (Currently Amended) In a program content delivery system having a head-end side

and a client side, a system for targetingtargeted program delivery, comprising: a central

data system at the head-end side which receivesreceiving viewing informationdata

selected from the group consisting of watch data, watch start time data, watch duration

data, and watch channel data, demographic information describing a program user, and

an electronic program guide information with metadata describing a program content; a

demographic cluster knowledge base acquirer receiving from the client side behavioral

data of the user, and the knowledge base acquirer outputting a knowledge base in the

form of a transition matrix with weight sets, the transition matrix predicting a

demographic group of the user; and a program content generating module disposed at the

head-end side and providing to the client side streams of program content including

advertisements based on the predicted demographic group of the user.

13. (Currently Amended) The program content delivery system according to claim 12,

which further comprises a realtime feedback link for delivering to said central data

system at the head-end side realtime information with click stream data concerning thea

user's viewing behavior of the userwith click stream data.

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14. (Currently Amended) The program content delivery system according to claim 12, wherein said demographic cluster knowledge base acquirer is based on a hidden Markov model.

15. (Currently Amended) The program content delivery system according to claim 12, wherein said demographic cluster knowledge base acquirer and said program content generating module are software modules each adapted to be stored on a machine-readable medium in the form of a plurality of processor-executable instructions.

16. (Currently Amended) The program content delivery system according to claim 12, wherein said demographic cluster knowledge base acquirer generates demographic cluster information of the user in terms of statistical state machine transition models.

17. (Currently Amended) The program content delivery system according to claim 16, wherein the state machines transition models are defined in the transition matrix at the head-end side, and the transition matrix contains information of program transitions initiated by the viewer at the client side.

18. (Currently Amended) The program content delivery system according to claim 12, wherein the transition matrix is one of at least two concurrent transition matrices including a channel matrix and a genre matrix.

19. (Currently Amended) The program content delivery system according to claim 12, wherein the transition matrix is a two-dimensional matrix with transitions from television channels in normal form to television channels in temporal form.

20. (Currently Amended) The program content delivery system according to claim 14 12, wherein said demographic cluster knowledge base acquirer is configured to parameterize the user's behavior with a double random pseudo hidden Markov process, and to define a low-level statistical state machine modeling a behavioral cluster and a top-level statistical state machine with active behavioral clusters and an interaction among between the active behavioral clusters.

21. (Currently Amended) The program content delivery system according to claim 12, wherein said demographic cluster knowledge base acquirer is configured to define a double random process with a plurality of dimensions, and to determine parallel statistical state machine transition events in at least two of three state categories including channel, genre, and title of the program content.